

Highlights

Overview

In this issue of the *Natural Gas Monthly*, preliminary estimates are available for the full year 1998 at the national level for natural gas production, storage, imports, and end-use consumption in most sectors. Highlights of the data contained in this issue are:

- End-use consumption of natural gas in 1998 is estimated to be 19.4 trillion cubic feet, 3 percent lower than the record-breaking level set in 1997.
- Warmer-than-normal temperatures early in the 1998-99 heating season (November through March) have resulted in lower demand for natural gas and higher amounts of working gas left in storage. Working gas is estimated to be 2.8 trillion cubic feet at the end of December 1998, a level not seen since the end of 1991.
- Dry natural gas production in 1998 is estimated to be 18.9 trillion cubic feet, essentially the same as in 1997 and nearly 1 percent more than in 1996.
- Ample supplies have contributed to generally lower natural gas prices both at the wellhead and for the end-use sectors in 1998. The cumulative average wellhead price for the first three quarters of 1998 is estimated to be \$1.90 per thousand cubic feet, 14 percent lower than in 1997.

Supply

The 1998-99 heating season began with 3,172 billion cubic feet of working gas reported in underground storage facilities (Table 10), the highest initial level for a heating season since 1992. There were 8 percent fewer heating degree days than normal (Table 26) during November 1998, leading to lower-than-expected demand for natural gas for space heating during the month. Net storage withdrawals during November 1998 are estimated to be very small, only 20 billion cubic feet, 89 percent lower than in November 1997 when the weather was colder than normal. In December 1998, the average temperature for the month continued to be warmer than normal, and net withdrawals are estimated to be 320 billion cubic feet. This lower demand, together with production levels comparable to last year, resulted in more than 2,832 billion cubic feet of working gas remain-

ing in storage at the end of 1998. The last time that working gas was near this level at the end of December was in 1991 when it reached 2,824 billion cubic feet.

Natural gas production in 1998 is estimated to be 18,949 billion cubic feet, essentially the same as the 1997 level of 18,902 billion cubic feet and about 1 percent more than the 1996 level (Figure HI1 and Table 1). Production in December 1998 is estimated to be 1,622 billion cubic feet, or 52.3 billion cubic feet per day. This daily rate is about the same as during the previous month but 3 percent higher than in December 1997.

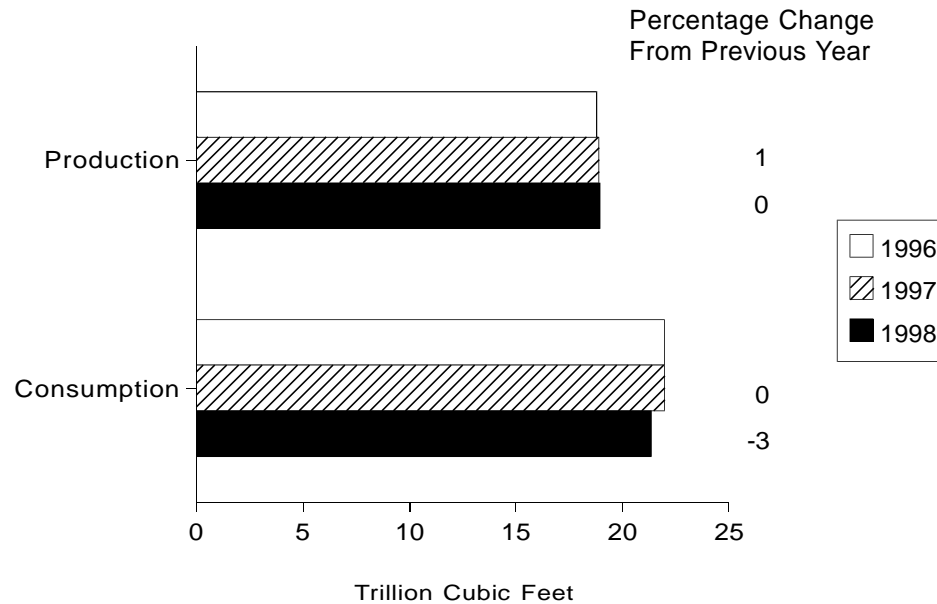
During 1998, estimates of net imports of natural gas were higher than the volumes reported for last year. The increase was greater in the latter half of the year compared with earlier months. Cumulatively from January through June, net imports in 1998 were 3 percent above those in 1997, while from July to December, they were 8 percent higher. Net imports during December 1998 are estimated to be 261 billion cubic feet, or 8.4 billion cubic feet per day (Table 2). This level is 6 percent higher than the daily rate during December 1997.

End-Use Consumption

End-use natural gas consumption is estimated to be 19,391 billion cubic feet in 1998. This level is 3 percent lower than in 1997, but consumption in both 1997 and 1996 had set all-time records at just over 20,000 billion cubic feet. The largest decline in natural gas consumption during 1998, in both quantity and percentage terms, occurred in the residential sector. Temperatures during the heating season months (January, February, March, November, and December) were generally warmer in 1998 than in 1997, reducing the demand for natural gas by residential consumers to meet space heating needs. Residential consumption of natural gas in 1998 is estimated to be 4,556 billion cubic feet, 428 billion cubic feet (9 percent) lower than in 1997 (Figure HI3 and Table 3).

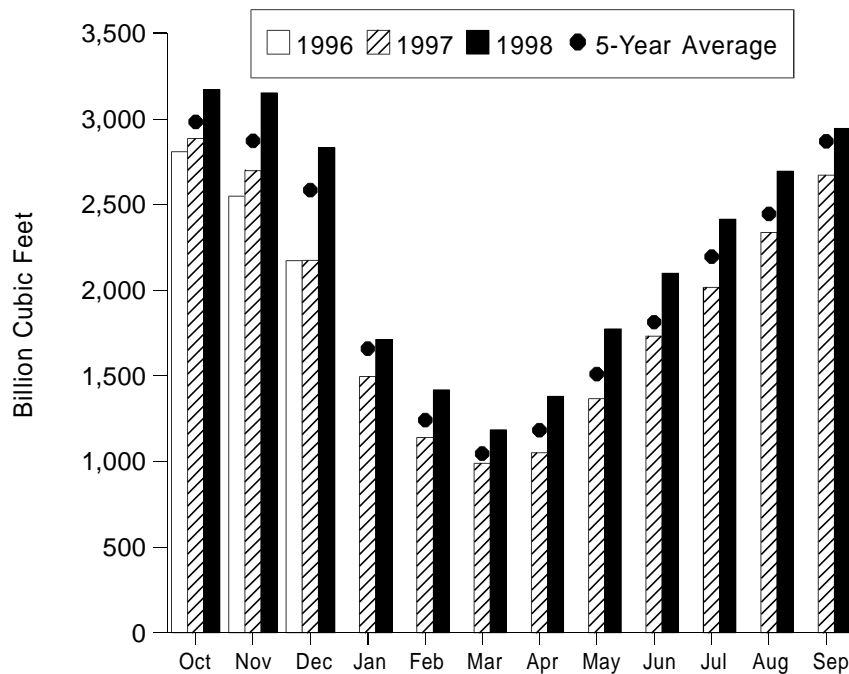
The industrial sector saw the second-largest drop in natural gas consumption between 1997 and 1998, falling by 350 billion cubic feet (4 percent) to an estimated 8,493 billion cubic feet. In the commercial sector, consumption fell by 144 billion cubic feet (4 percent) in 1998 to 3,079 billion cubic feet. Warmer weather also played a role in the decline in this sector.

Figure HI1. Natural Gas Production and Consumption, January-December, 1996-1998



Source: Table 2.

Figure HI2. Working Gas in Underground Storage in the United States, 1996-1998



Note: The 5-year average is calculated using the latest available monthly data. For example, the December average is calculated from December storage levels for 1993 to 1997 while the January average is calculated from January levels for 1994 to 1998. Data are reported as of the end of the month, thus October data represent the beginning of the heating season.

Sources: Form EIA-191, "Underground Natural Gas Storage Report," Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition," and Short-Term Integrated Forecasting System.

Monthly estimates of natural gas consumption by electric utilities are available through September 1998. Cumulatively for the first three quarters of the year, electric utility consumption of natural gas is 301 billion cubic feet (13 percent) higher than for the same period in 1997. Exceedingly hot temperatures in the Southwest during the summer boosted the demand for electric-powered air conditioning and much of this peak demand was met by natural gas.

Prices

Average natural gas prices for the first three quarters of 1998 (through August for electric utilities) are estimated to be lower than those of 1997 at the wellhead, the city gate, and for the end-use customer classes (Figure HII4)¹. Cumulatively for January through September, the national average wellhead price is estimated to be \$1.90 per thousand cubic feet in 1998, 14 percent below that of 1997 (Table 4). For natural gas delivered to the city gate, the cumulative average price is estimated to be \$3.15 per thousand cubic feet, 11 percent below that of 1997 for the same period. Cumulative average prices declined in all the end-use sectors between 1997 and 1998. The estimated price declines are 1 percent for the residential sector, 4 percent for the commercial sector, and 9 percent for the industrial sector. In the electric utility sector, the

average price paid for natural gas is estimated to be \$2.44 for January through August 1998, 6 percent lower than the 1997 average.

Ample supplies and warmer-than-normal weather from mid-November through early December 1998 have prevented the sharp rise in both natural gas spot and futures prices at the Henry Hub that typically occurs early in the heating season. Both spot and futures prices have been below \$3.00 per million Btu from November 2 through December 24, 1998 (Figure HI5). The highest futures settlement price during this period was \$2.553 per million Btu on November 5 and 6 (for the December contract), while the lowest was \$1.840 on December 10 (for the January contract). The daily average spot price actually plunged to \$1.01 per million Btu by December 4, having reached a high for the period of \$2.34 on November 11. In contrast, the futures settlement price in late 1996 rose from roughly \$2.600 per million Btu in early November to a peak of \$4.573 on December 20. The futures price was above \$3.00 from mid-November through late December in 1996.

The pattern of futures prices in the second half of 1997 was unusual in that coal supply problems in the Southwest spurred demand for natural gas causing futures prices to rise above \$3.00 per million Btu in late September. The futures price generally declined in both November and December 1997. Futures prices in late 1998 are below those of 1997.

¹End-use prices in the residential, commercial, and industrial sectors are for onsystem gas sales only. While monthly onsystem sales are nearly 100 percent of residential deliveries, in 1998 they have been from 47 to 72 percent of commercial deliveries and only 13 to 17 percent of industrial deliveries (Table 4).

Figure HI3. Natural Gas Delivered to Consumers, January-December, 1996-1998

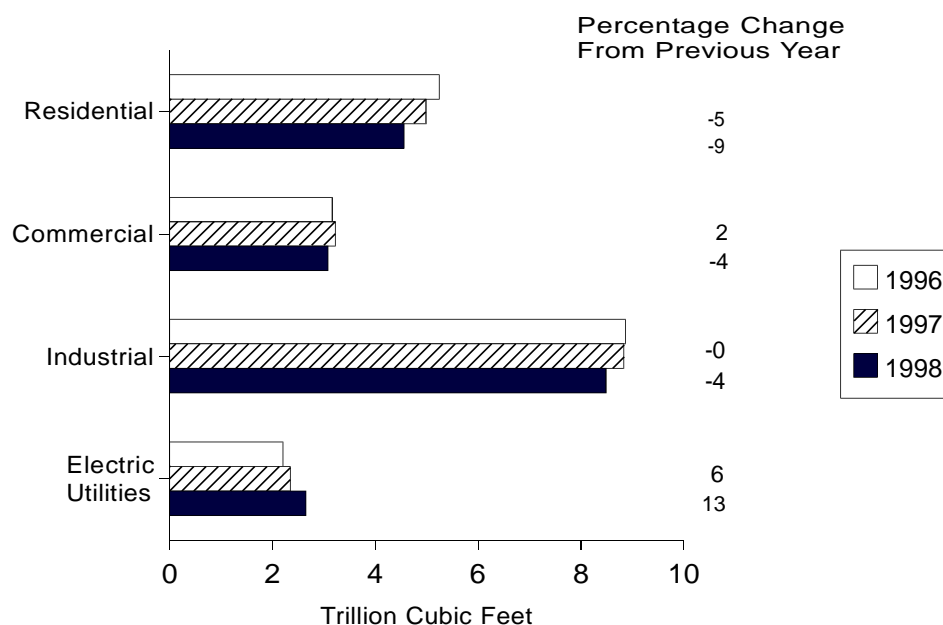


Figure HI4. Average Delivered and Wellhead Natural Gas Prices, January-September 1996-1998

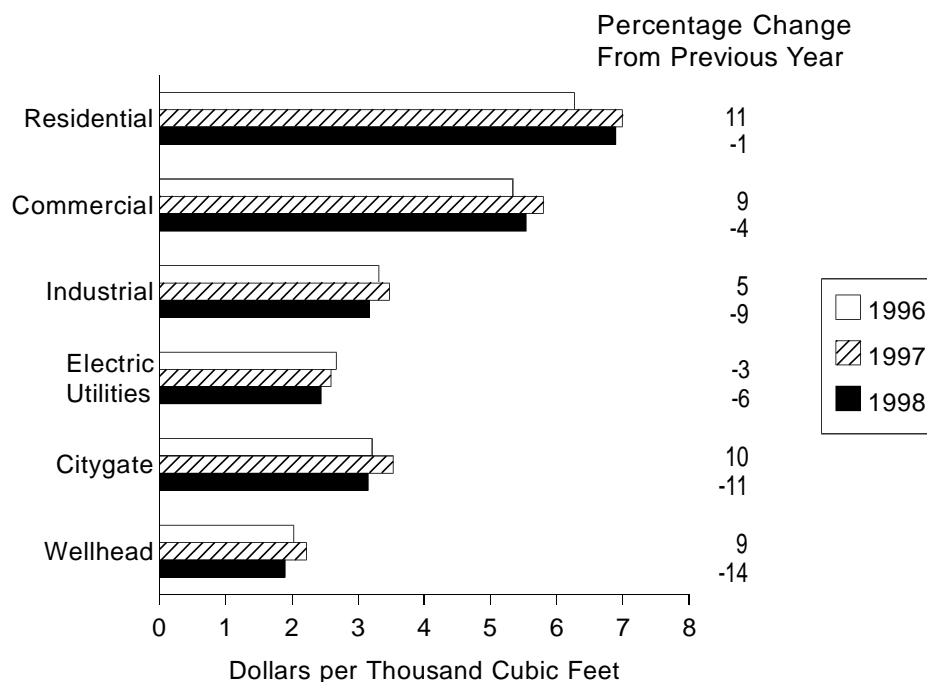
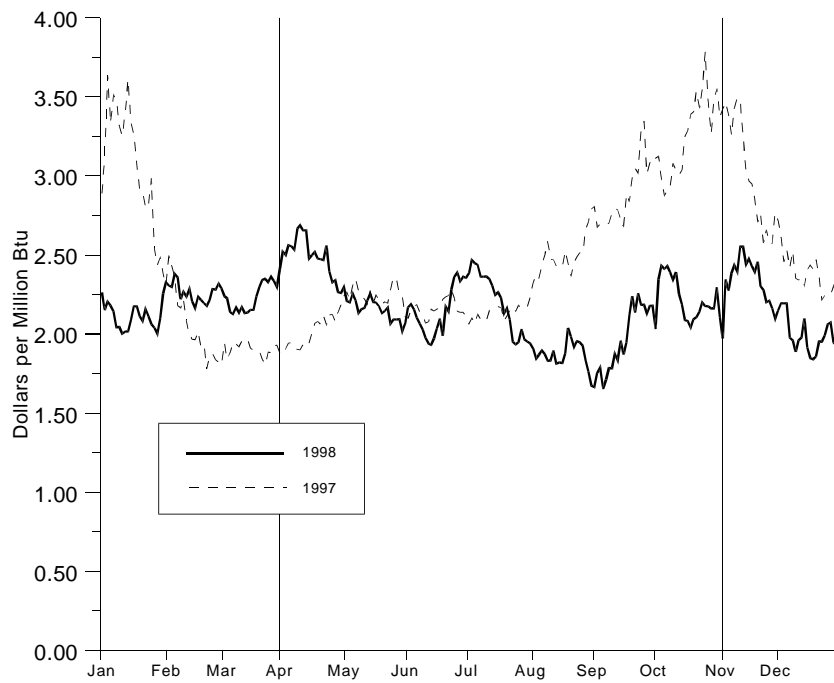


Figure HI5. Daily Futures Settlement Prices at the Henry Hub



Note: The futures price is for the nearby month contract, that is, for the next contract to terminate trading. Contracts are traded on the New York Mercantile Exchange. April 1 is the beginning of the natural gas storage refill season. November 1 is the beginning of the heating season.

Source: Commodity Futures Trading Commission, Division of Economic Analysis.